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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

DETAILED ACTION

This action is in response to the amendment filed 13 April 2009. Claims 1-7 have been

canceled. Claims 8, 11, 13, 14, 16, 17, 19-21 have been amended. Claims 22-27 are

new. Claims 8-27 are pending and have been considered below.

To expedite prosecution, the applicant should consider MPEP paragraph 714.12:

"Many of the difficulties encountered in the prosecution of patent applications after final
rejection may be alleviated if each applicant includes, at the time of filing or no later than
the first reply, claims varying from the broadest to which he or she believes he or she is
entitled to the most detailed that he or she is willing to accept."

Response to Arguments

1.   Applicant's arguments filed 13 April 2009 have been fully considered but they are

not persuasive.

The applicant argues "that modern windowing programs normally cascade, meaning

that when a new window is opened, the new window will be shifted down and to the

right from the previous window. So, unless exactly the right number of windows have

been opened prior to the start of the Tuttle testing system, Tuttle will reject a perfectly

fine operation due to the shifting resulting from cascading windows.

In addition, since Tuttle is only able to match a screen for "pass/fail regression testing"

(Tuttle Col 14, lines 38-41), there is no opportunity to choose what action to take,

depending upon what occurs. Instead, Tuttle must simply halt the program and return an

error when a screen image fails to match.

The Examiner will appreciate that Tuttle is consequently limited solely to testing of

hardware such as might occur at a manufacturing facility, where every computer is loaded with the same software, and is tested immediately at start-up.

In contrast, the present invention searches the image for individual elements, such as "icons as illustrated, or various buttons, message boxes, prompts or any other graphical image or control." (Present specification, page 8, lines 17-19) As a result, the user does not need to worry where on the screen the image appears, and can make intelligent decisions about any subsequent actions, including the placement of a mouse click or other similar action relative to the placement of the individual element, and also alternatives that might arise and still be handled to continue the testing.

This may seem to be a subtle difference, but the implications are far reaching. For exemplary purposes, a calculator can be tested through all numbers and operations by storing the images for each of the operations and the numbers 0 - 9. For a simple calculator, the operations might be "add", "subtract", "multiply", "divide", "equals", and "clear". Then, using simple "For Next", "Repeat With", "Do While" loops or the like, each of the operations may be tested and the results confirmed by saving the images of operations, numerals and any other necessary elements, and using very simple loops requiring less than forty lines of code. Both the code and the images will take up very little storage space. This is done without concern for where on the screen the calculator might appear. In contrast, Tuttle must actually execute every possible test, and then save the image to compare with future systems. The storage of these images will require an impractical amount of time, and an unreasonable amount of storage space."

The applicant seems to be making a conceptual argument and has not cited any claim language for which the applicant believes that Tuttle is deficient. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the applicant is reminded that, as per 35 USC Paragraph 112, "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." Therefore, the applicant must present arguments traversing the examiner's rejection of the claims, not the conceptual differences between the examiner's cited prior art and the applicants invention as described in the written description. Therefore, the examiner believes that the prior art of record as cited discloses the limitations as claimed.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 5,157,782) in view of Moore et al. (US 5,604,509).

Claim 1: (Canceled)

Claim 2: (Canceled)

Claim 3: (Canceled)

Claim 4: (Canceled)

Claim 5: (Canceled)

Claim 6: (Canceled)

Claim 7: (Canceled)

Claims 8 and 16: Tuttle discloses method for using a first computer system to remotely monitor and interact with the operation of a second computer system through a graphical user interface of said second computer system, comprising the steps of:

a. receiving a pixel image said second computer system graphical user interface at said first computer system (column 6, lines 11-21, column 8, lines 39-47);

b. searching said pixel image of said second computer system graphical user interface for a first graphical element contained within and comprising less than said pixel image (column 8, lines 39-47),

c. generating a user peripheral input device input action within said second computer system graphical user interface as interpreted by a second computer peripheral input device controller channel by passing a signal from said first computer system to said second computer system graphical user interface (column 6, lines 1-10, 22-28);

d. monitoring said second computer system graphical user interface or a pixel image of said second computer system graphical user interface from said first computer system for an expected second graphical element (column 6, lines 28-30, 34-39); and

e. signaling a failure at said first computer system if said expected second graphical element is not detected (column 6, lines 39-41).

but does not disclose

a. generating a user peripheral input device input action within said second computer system graphical user interface as interpreted by a second computer peripheral input device controller channel by passing a signal **through an i/o communications channel** from said first computer system to said second computer system graphical user interface **responsive to said receiving and searching steps,**

b. monitoring said pixel image of said second computer system graphical user interface from said first computer system for an expected second graphical element contained within and comprising less than said pixel image within a **predetermined time interval**; and

c. signaling a failure at said first computer system **if said predetermined time interval elapses** without detecting said expected second graphical element.

However, Moore discloses a system where video data is sent from a second computer

(a system under test) to a first computer (host or remote computer) over a

communication channel (column 2, lines 41-59) and displayed on a display of the first

computer (column 3, lines 8-19). A user inputs, i.e. mouse and keyboard inputs, can be

sent over a communications channel from the first (host or remote computer) to the

second computer, system under test (column 4, lines 16-23) where the input data is

processed (column 4, lines 39-50). Therefore, it would have been obvious to one

having ordinary skill in the art at the time of the invention to add generating a user

peripheral input device input action within said second computer system (system under

test) graphical user interface as interpreted by a second computer peripheral input

device controller channel by passing a signal **through an i/o communications**

channel from said first computer system (host or remote computer) to said second

computer system graphical user interface responsive to said receiving step to Tuttle.

One could have been motivated to add generating a user peripheral input device input

action within said second computer system graphical user interface as interpreted by a

second computer peripheral input device controller channel by passing a signal

through an i/o communications channel from said first computer system to said

second computer system graphical user interface responsive to said receiving step to

Tuttle in order to extend the range of communication between the first and second

computers of Tuttle. It appears that Tuttle is intended to be used wherein the first and

second computers are in close proximity. Adding the limitations of Moore to Tuttle could

allow Tuttle to be able to test the software/hardware of the second computer at the first
computer over a network over a larger distance.

Neither Tuttle nor Moore disclose generating a user peripheral input device input action
within said second computer system graphical user interface as interpreted by a second
computer peripheral input device controller channel by passing a signal through an i/o
communications channel from said first computer system to said second computer
system graphical user interface **responsive to said receiving step**. However, it would
have been obvious to one having ordinary skill in the art at the time of the invention to
add generating a user peripheral input device input action within said second computer
system graphical user interface as interpreted by a second computer peripheral input
device controller channel by passing a signal through an i/o communications channel
from said first computer system to said second computer system graphical user
interface **responsive to said receiving step** to Tuttle and Moore. One could have
been motivated to add generating a user peripheral input device input action within said
second computer system graphical user interface as interpreted by a second computer
peripheral input device controller channel by passing a signal through an i/o
communications channel from said first computer system to said second computer
system graphical user interface **responsive to said receiving step** to Tuttle and Moore
because as a user in Tuttle issues inputs that are communicated to the second
computer and the second computer responds to the inputs with video signals, it is
reasonable to conclude that a user's subsequent input(s) would be in response to video

responses by the second computer as is typical when a user uses a user interface (UI) of a computer. That is, when a user engages a UI of a computer, the user's inputs are neither random nor disassociated from the response to the input. Therefore, it is reasonable to conclude that in testing a UI or a computer, a user's input would be associated in some way, either in response to or in anticipation of, a UI response.

Neither Tuttle nor More disclose:

   a. monitoring said second computer system graphical user interface or a pixel image of said second computer system graphical user interface from said first computer system for an expected second graphical element within a **predetermined time interval**; and

   b. signaling a failure at said first computer system **if said predetermined time interval elapses** without detecting said expected second graphical element.

However, Tuttle discloses that at those points during playback which corresponds to the original command to capture visual display data, the software modules send the digital video signal processing unit (DVPU) the previously stored visual display signals, and the DVPU then captures new visual display signals from the visual display device. The previously stored visual display signals are compared by the DVPU to the newly captured visual display signals and if these signals do not match, then the DVPU sends an indication to the software modules on the host that an error has occurred (column 6, lines 31-41) and another such parameter used primarily during Playback Mode sets the

amount which the software modules waits for a response from the DVPU/SUT; before the comparison test is deemed to have failed (column 39, lines 53-57). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to add

   a. monitoring said second computer system graphical user interface or a pixel image of said second computer system graphical user interface from said first computer system for an expected second graphical element within a **predetermined time interval**; and

   b. signaling a failure at said first computer system **if said predetermined time interval elapses** without detecting said expected second graphical element,

to Tuttle and Moore. One could have been motivated to add

   a. monitoring said second computer system graphical user interface or a pixel image of said second computer system graphical user interface from said first computer system for an expected second graphical element within a **predetermined time interval**; and

   b. signaling a failure at said first computer system **if said predetermined time interval elapses** without detecting said expected second graphical element,

to Tuttle and Moore because It is unreasonable to conclude that a user in Tuttle would randomly intersperse capture commands through an input sequence. In fact, the examiner asserts that a user would initiate a capture command where it would be most

appropriate to capture the video results of an input or a sequence of inputs. In other words, a user would only issue a capture when the user knew that an input or sequence of inputs would result in an expected video signal, i.e. the user would not issue the capture command **before** the expected resultant video signal. However, it is also unreasonable to expect that the user would wait an indeterminate amount of time after the input or sequence of inputs to issue a capture command. Therefore, it would have been obvious to include a timing mechanism in the capture command such that the capture command is issued before after the expected resultant video signal is generated but within a reasonable amount of time.

Claims 9 and 17: Tuttle and Moore disclose the methods of claims 8 and 16 and Tuttle further discloses the steps of:

a. transferring said user input action to a script stored on said first computer system (column 7, lines 19-30);

b. re-executing said steps of receiving, generating, monitoring and signaling subsequent to said storing step under control of said stored script (column 7, lines 48-58)..

Claims 10 and 18: Tuttle and Moore disclose the methods of claims 8 and 16 and Tuttle discloses further the steps of:

a. providing graphical user interface language extensions commands to a scripting language (column 15, lines 56-68, column 16, lines 1-24); and

   b. passing said generated user input action through said graphical user interface
language extensions from a scripting language processor to a language
extensions processor (column 8, lines 21-26).

Claims 11 and 19: Tuttle and Moore disclose the methods of claims 8 and 16 and Tuttle
further discloses the steps of:

   a. generating a user input action within said second computer system responsive to
said second graphical element (column 8, lines 18-26);

   b. monitoring said second computer system graphical user interface for an
expected third graphical element contained within and comprising less than said
pixel image within a predetermined time interval (column 6, lines 28-30, 34-39,
column 8, lines 39-47); and

   c. signaling a failure at said first computer system if said predetermined time
interval elapses without detecting said expected third graphical element (column
6, lines 39-41, column 39, lines 53-57).

Claims 12 and 20: Tuttle and Moore disclose the methods of claims 8 and 16 and Tuttle
further discloses the steps of:

   a. receiving a local user input action at said first computer system within said local
display (column 6, lines 1-4, column 36, lines 6-14);

   b. wherein said generated user input action emulates said local user input action
(column 7, lines 12-18),

but does not disclose depicting said second computer system graphical user interface upon a local display of said first computer system including said first graphical element. However, Moore discloses depicting said second computer system graphical user interface upon a local display of said first computer system including said first graphical element (column 3, lines 8-25). Further, Tuttle discloses that the first computer (host) has direct access to the digital video data of the display screen of the second computer (system under test) (column 13, lines 57-59), and inputting inputs through a touch screen (column 36, lines 6-14). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to add depicting said second computer system graphical user interface upon a local display of said first computer system including said first graphical element to Tuttle and Moore. One could have been motivated to add depicting said second computer system graphical user interface upon a local display of said first computer system including said first graphical element to Tuttle and Moore because as a user in Tuttle issues inputs that are communicated to the second computer and the second computer responds to the inputs with video signals, it is reasonable to conclude that a user's subsequent input(s) would be in response to video responses by the second computer as is typical when a user uses a user interface (UI) of a computer. That is, when a user engages a UI of a computer, the user's inputs are neither random nor disassociated from the response to the input. Therefore, it is reasonable to conclude that in testing a UI or a computer, a user's input would be associated in some way, either in response to or in anticipation of, a UI

response. In order for a user to issue commands in response to UI responses on the second computer, it would be beneficial for the user to be able to see the display of the second computer on the display of the first computer.

Claims 13 and 21: The method of claim 8 further comprising the steps of:

a. providing graphical user interface language extensions commands to a scripting language (column 15, lines 56-68, column 16, lines 1-24); and

b. receiving a local user input action within said local display (column 6, lines 1-4, column 36, lines 6-14);

c. transferring said user input action to a script stored on said first computer system (column 7, lines 19-30);

d. passing said generated user input action through said graphical user interface language extensions from a scripting language processor to a language extensions processor for reproduction at said second computer system graphical user interface, wherein said generated user input action emulates said local user input action (column 15, lines 56-68, column 16, lines 1-24, column 8, lines 21-26, column 7, lines 12-18); and

e. re-executing said steps of receiving, searching, generating, monitoring and signaling subsequent to said storing step under control of said stored script (column 7, lines 48-58, column 8, lines 39-47),

and Moore discloses depicting said computer system graphical user interface upon a

local display of said first computer system including said first graphical element (column

3, lines 8-25). Further, Tuttle discloses that the first computer (host) has direct access

to the digital video data of the display screen of the second computer (system under

test) (column 13, lines 57-59), and inputting inputs through a touch screen (column 36,

lines 6-14). Therefore, it would have been obvious to one having ordinary skill in the art

at the time of the invention to add depicting said computer system graphical user

interface upon a local display of said first computer system including said first graphical

element to Tuttle and Moore. One could have been motivated to add depicting said

computer system graphical user interface upon a local display of said first computer

system including said first graphical element to Tuttle and Moore because as a user in

Tuttle issues inputs that are communicated to the second computer and the second

computer responds to the inputs with video signals, it is reasonable to conclude that a

user's subsequent input(s) would be in response to video responses by the second

computer as is typical when a user uses a user interface (UI) of a computer. That is,

when a user engages a UI of a computer, the user's inputs are neither random nor

disassociated from the response to the input. Therefore, it is reasonable to conclude

that in testing a UI or a computer, a user's input would be associated in some way,

either in response to or in anticipation of, a UI response. In order for a user to issue

commands in response to UI responses on the second computer, it would be beneficial

for the user to be able to see the display of the second computer on the display of the

first computer.

Claim 14: Tuttle discloses a method for enabling a local system to remotely operate a remote computer system through a graphical user interface on said remote computer system by using local scripts that selectively respond to changes in graphical displays upon said graphical user interface of said remote computer system, comprising the steps of:

a. capturing user input effected in said depiction of said remote system graphical user interface display (column 6, lines 22-28);

b. implementing through a local system command language set user input emulations representative of said captured user input reproduced at said remote computer system graphical user interface through a channel (column 15, lines 56-68, column 16, lines 1-24);

c. image processing said remote computer system graphical displays to detect a first entity contained within and comprising less than said graphical display upon said graphical user interface of said remote computer system (column 6, lines 28-30, 34-39);

d. controlling a flow of execution of said local system through a scripting language having scripting commands in combination with said command language set (column 6, lines 31-48, column 8, lines 39-47); and

e. communicating between said local system and said remote computer system graphical user interface (column 6, lines 31-48).

Moore discloses displaying a depiction of said remote system graphical user interface display on said local system (column 3, lines 8-25). Further, Tuttle discloses that the first computer (host) has direct access to the digital video data of the display screen of the second computer (system under test) (column 13, lines 57-59), and inputting inputs through a touch screen (column 36, lines 6-14). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to add displaying a depiction of said remote system graphical user interface display on said local system to Tuttle. One could have been motivated to add displaying a depiction of said remote system graphical user interface display on said local system to Tuttle because as a user in Tuttle issues inputs that are communicated to the second computer and the second computer responds to the inputs with video signals, it is reasonable to conclude that a user's subsequent input(s) would be in response to video responses by the second computer as is typical when a user uses a user interface (UI) of a computer. That is, when a user engages a UI of a computer, the user's inputs are neither random nor disassociated from the response to the input. Therefore, it is reasonable to conclude that in testing a UI or a computer, a user's input would be associated in some way, either in response to or in anticipation of, a UI response. In order for a user to issue commands in response to UI responses on the second computer, it would be beneficial for the user to be able to see the display of the second computer on the display of the first computer.

Moore discloses a system where video data is sent from a second computer (a system

under test) to a first computer (host or remote computer) over a communication channel

(column 2, lines 41-59) and displayed on a display of the first computer (column 3, lines

8-19). A user inputs, i.e. mouse and keyboard inputs, can be sent over a

communications channel from the first (host or remote computer) to the second

computer, system under test (column 4, lines 16-23) where the input data is processed

(column 4, lines 39-50). Therefore, it would have been obvious to one having ordinary

skill in the art at the time of the invention to add communicating between said local

system and said remote computer system graphical user interface **through a**

communication interface responsive to said flow controlling step to Tuttle and Moore.

One could have been motivated to add communicating between said local system and

said remote computer system graphical user interface **through a communication**

interface responsive to said flow controlling step to Tuttle and Moore in order to extend

the range of communication between the first and second computers of Tuttle. It

appears that Tuttle is intended to be used wherein the first and second computers are in

close proximity. Adding the limitations of Moore to Tuttle could allow Tuttle to be able to

test the software/hardware of the second computer at the first computer over a network

over a larger distance.

Neither Tuttle nor Moore disclose controlling a flow of execution of said local system

through a scripting language having scripting commands in combination with said

command language set **responsive to a detection of said first entity during said**

image processing step. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to add controlling a flow of execution of said local system through a scripting language having scripting commands in combination with said command language set **responsive to a detection of said first entity during said image processing step** to Tuttle and Moore. One could have been motivated to add controlling a flow of execution of said local system through a scripting language having scripting commands in combination with said command language set **responsive to a detection of said first entity during said image processing step** to Tuttle and Moore because as a user in Tuttle issues inputs that are communicated to the second computer and the second computer responds to the inputs with video signals, it is reasonable to conclude that a user's subsequent input(s) would be in response to video responses by the second computer as is typical when a user uses a user interface (UI) of a computer. That is, when a user engages a UI of a computer, the user's inputs are neither random nor disassociated from the response to the input. Therefore, it is reasonable to conclude that in testing a UI or a computer, a user's input would be associated in some way, either in response to or in anticipation of, a UI response.

Claim 15: Tuttle and Moore disclose the method for enabling a local system to remotely operate a remote computer system through a graphical user interface on said remote computer system of claim 14 and Tuttle further discloses the steps of:

   a. storing said scripting commands into a storing means (column 7, lines 23-26);

   b. inserting a command from said command language set into said storing means

       (column 15, lines 56-63, column 29, lines 23-28); and

   c. executing said inserted stored command (column 29, lines 29-39).

Claim 22: Tuttle and Moore disclose the method of claim 8, and Tuttle further discloses
said step of generating a user peripheral input device input action further comprises
locating said user peripheral input device input action within said first graphical element.
(column 39, lines 9-20).

Claim 23: (New Tuttle and Moore disclose the method of claim 22, and Tuttle further
discloses said user peripheral input device input action further comprises a click event
(column 39, lines 9-20).

Claim 24: Tuttle and Moore disclose the method of claim 14, and Tuttle further discloses
said step of communicating between said local system and said remote computer
system graphical user interface further comprises locating a user peripheral input device
input action at a location relative to said first entity column (column 39, lines 9-20).

Claim 25: Tuttle and Moore disclose the method of claim 24, and Tuttle further discloses
said user peripheral input device input action further comprises a click event (column

39, lines 9-20).

Claim 26: Tuttle and Moore disclose the method of claim 16, and Tuttle further discloses said step of generating a user peripheral input device input action further comprises locating said user peripheral input device input action within said first graphical entity and Tuttle further discloses (column 39, lines 9-20).

Claim 27: Tuttle and Moore disclose the method of claim 26, and Tuttle further discloses said user peripheral input device input action further comprises a click event (column 39, lines 9-20).

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN M. HEFFINGTON whose telephone number is (571)270-1696. The examiner can normally be reached on Mon - Fri 8:00 - 5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on (571) 272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH

/Steven B Theriault/

Primary Examiner, Art Unit 2179